

## Presentation 9 – Dane Cook

### Functional Imaging of Pain in Veterans With Unexplained Muscle Pain

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### Rationale

Unexplained muscle pain is a serious problem for many Gulf Veterans (GVs)

- 4<sup>th</sup> most frequently reported symptom (IOM report, 1996)
- Reported twice as frequently in GV's than non-GV's (Kang et al., 2000)
- Serious adverse consequences on the veterans personal and professional lives (Kang et al., 2000)

Numerous studies have described the problem, however little research aimed at determining cause

### Key Questions

Are GV's with unexplained musculoskeletal pain more sensitive to experimental pain stimuli compared to healthy GV's and GV's with rheumatoid arthritis (RA)?

Do GV's with unexplained muscle pain exhibit an exaggerated brain response to sensory stimuli compared to controls?

Do GV's with unexplained muscle pain fail to exhibit activity in brain areas known to be involved in pain inhibition or modulation?

### Design

- **N=54 Participants**
  - n=18 GV's with unexplained muscle pain
  - n=18 GV's with RA
  - n=18 healthy GV's
- **Testing over 2 days**
  - Day 1 = pain sensitivity testing and MRI training (Mock MRI at WRIISC)
  - Day 2 = brain imaging while receiving painful and non-painful stimuli

## Analysis

Sensory data will be examined for group differences and psychophysical curve estimates will be used to determine pain sensitivity in GVs

fMRI data will be processed and analyzed using statistical parametric mapping techniques (SPM)

Whole brain and region of interest analyses will be used to determine CNS sensitivity and nociceptive modulation in GVs with unexplained muscle pain compared to healthy and RA GVs